

# VIRGINIA WILDLIFE

MARCH 1984

ONE DOLLAR



# VIRGINIA WILDLIFE

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## Cover

One of Virginia's cool mountain streams, ideal for trout fishing, is photographed by Harry Murray, Edinburg. It's that time of year again. Mr. Murray tells you, beginning on page 18, how to make it a successful season; Virginia's trout stocking plan follows. Back cover: National Wildlife Week is March 18-24. The theme: "Water: We Can't Live Without It." Wildlife needs water—it's an essential element in wildlife habitat. Read more about water on page 3. Photo of grackle by Karl Maslowski, Cincinnati, Ohio.



## Element

Water: it's essential for life yet its character is elusive, difficult to understand. Here are some facts about water.

*Spike Knuth*



VCGIF photo

(Above) Water is one of nature's few and most widespread flowing things. (Left) It is essential to life—plant life, animal life, human life.



VCGIF photo

**W**ater is the most essential, most taken-for-granted substance in nature. Water offers flora and fauna shelter and support, an environment for the living. Water is the medium of life, acting as transporter of food, minerals and oxygen. Significantly, living things are made mostly out of water.

For aquatic plants and animals, water is the habitat; for all life it is the yard-stick by which evolution has manipulated life for survival. Desert life, for example, has adapted itself over eons for survival in areas where annual rainfall is extremely low. Simply, animals and plants incapable of adapting to dry climates (that is, having no mechanisms for conserving or storing water), are not found in deserts.

No organism creates water. Water is inorganic. It is the most abundant inorganic compound on earth and one of the few liquids found, in its normal state, in nature (mercury being another). Water is the most plentiful inorganic compound found inside living organisms (comprising 65 to 90 percent by volume of all living things).

How is water so special? First, it covers three-fourths of the earth's surface. Second, it is—next to oxygen—life's most limiting factor.

Water is so special because of its chemical and physical properties. Every molecule of water has two hydrogen atoms and one oxygen atom ( $H_2O$ ). Because the water molecule has two *different* atoms, it becomes what chemists call a compound. These dissimilar atoms are intimately associated with each other. Because these atoms *readily* associate, there's lots of water on earth.

Water is so special because it is the *universal solvent*. Because the water molecule has a polar structure—that is, distinct negative and positive regions—it is an excellent dissolving medium, or solvent.

When a substance dissolves, it breaks into electrically charged particles called "ions." In water, ions are attracted either to the negative or positive side of a water molecule. When a substance dissolves in water, the process is called "hydration."

Because water is the way it is, it makes the best of all possible solvents. It dissolves more substances than almost any other liquid. This shows why water is so valuable as a medium in which soluble materials are absorbed from the environment, and by which foods, minerals and other vital substances are transported throughout living systems.

The physical properties of water influence the way of life on earth. Life has evolved on water's terms. To survive, life has had to seek and use water—and in many cases even live in water, even under the most hostile conditions. An inability to do so has meant extinction for some forms of life.

Water is so special because it has *unique thermal properties*. They are related to the fact that water's temperature does *not* vary as widely nor as easily as the temperature of the air. These properties are:

1. *Water has high specific heat.* It takes a large amount of heat to change the temperature of water. It takes one gram-calorie of heat to raise one gram of water one degree centigrade.

Water's high specific heat means it takes a lot of energy from the sun to raise water temperature even a few degrees. This is fortunate. Many aquatic organisms can exist only within a narrow band of temperatures. Also, because water temperature changes are so gradual, various organisms can stay for a time in water optimal for some phase of their life cycle. For instance, trout eggs develop in water between 0°C and 12°C, but under optimal conditions at 4°C. However, the optimum temperature for adult trout growth is about 20°C. Frog eggs develop between 0°C and 30°C, with the optimum at 22°C.

2. *Water has high latent heat of fusion.* It takes 80 calories to change one gram of ice into water with no change in temperature (and it takes the loss of 80 calories to convert one gram of water into ice). The amount of heat here is equivalent to that which is needed to raise one gram of water from 0°C to 80°C.

The annual temperature of a lake, even in the South, may vary from 10°C to 30°C, but the change in temperature is gradual. Water, therefore, acts as a buffer to the more variable temperature changes of the atmosphere. Water animals are protected from the shock of sudden thermal change. If the ambient temperatures become unseasonably cold, however, water temperatures may drop to such a level that fish kill-offs are possible. In such cases, only the fittest of the species will survive.

3. *Water has the highest known heat of evaporation.* No matter the temperature, water evaporates wherever it meets air. Water, however, must absorb a lot of heat before its molecules are released into the air as vapor. At 100°C it takes 536 calories to convert one gram of water into water vapor. This is the same heat necessary to warm 536 grams of water one degree centigrade.

Because there is so much water, its evaporation influences the world's climate. Water helps dissipate solar radiation with evaporation. When water evaporates, it takes out of the environment a tremendous amount of thermal energy. This activity moderates a climate and makes it habitable for a greater variety of flora and fauna.

4. *Water has its greatest density at 4°C.* Aquatic life (also the sport fisherman) can be thankful that water is at its densest at 4°C (46°F). Both above and below this temperature water molecules expand and the liquid becomes lighter. This unique

property prevents ponds and lakes from freezing solid. This, coupled with the fact that bodies of water freeze from the top down, enables aquatic life to survive in non-frozen portions of the deep during the winter.

Lakes stratify because water varies in density with temperature. By early spring, there may be a coating of ice on a lake. As the average temperature each day slowly increases (daylight lasting longer and solar rays striking the earth's surface more directly), ice begins melting and eventually disappears. When the water first melts, its temperature increases from slightly above 0°C (32°F) to 4°C. At this point water's density suddenly becomes its greatest. The water, with the help of the wind, sinks. Colder water rises, is warmed by the air and sinks, and so forth. Eventually all water in the lake becomes 4°C. This process is the spring overturn.

As warming continues into summer, stratification results. Top layer of water is warmed while colder, heavier water of the deep stays put. Fish stay in the lower levels because here oxygen is in greater supply. At colder temperatures water molecules contract to allow room for more oxygen-containing molecules. However, oxygen content in the lower colder regions may eventually become used up. If the lower levels are beyond light's penetration, oxygen-consuming decay of organic matter on the bottom takes place. Such stagnation can also occur where ice blocks light from lake depths (and, therefore, blocks oxygen-producing photosynthetic activity.).

With the arrival of autumn, air temperatures drop and surface waters cool until they drop and circulate through all depths. Eventually lake temperatures will be equal at all levels. This is fall overturn.

A slight lake stratification may occur in winter. First, surface water temperature drops to 4°C and sinks. Remaining surface water temperature dips to freezing, forming ice. Solar radiation penetrates the ice and warms the water just beneath it. As this water warms to 4°C, it sinks and mixes with water already warmed by the heat conduction from the muddy bottom. Here, the *lower* lake levels become warmer than the upper levels.

Just how severe summer or winter stratification, or stagnation, becomes is determined by how deep a lake is, by how "rich" it is in organic matter, and by the climate common to it. One

thing is certain: the way water is makes a large body of it stratify and mix. Mixing of water in a lake is healthy for the lake's aquatic life because such mixing spreads oxygen and nutrients through all parts of the lake's environment.

Water is special because of two physical characteristics: its *viscosity*, and its *surface tension*. Man and other living things should be thankful that water flows. It can rest still, as in a pond or lake, or it can be active, and move. Water is one of nature's few and most widespread flowing things. When it flows, it carries mixtures locked within it: nutrients and minerals found in various life cycles. It transports things on or along with itself: leaves, seeds, waterfowl.

Water's "carrying capacity" is in its viscosity. Viscosity is the "substance" of a liquid, its movement in layers, the resistance it makes when it flows over or around something. Such resistance can result in soil erosion. Viscosity is observed in a stream where the current flows more swiftly in the middle and more slowly along the banks. Viscosity simply answers the questions: How fast does a liquid flow? How much friction is there between the layers of a liquid? Syrup, for instance, is more viscous than water, and less fluid.

**V**iscosity of water is responsible for many adaptations seen in aquatic life. Viscosity offers friction to objects moving in water. For mobility's sake, aquatic creatures must adapt in some way to accommodate this resistance. A mucous coating on the streamlined body of a fish serves as an adaptation to reduce the resistance of water's viscosity.

Surface tension means that water molecules are attracted to each other more strongly where they meet the air. This attraction is strong enough to form a surface skin capable of physically supporting such small creatures as the water strider, water spider and whirligig beetle. Surface tension may be a difficult barrier for insects (imagoes of caddisflies and mayflies) trying to escape water. They get caught at the surface and become a tasty morsel for each other. Surface tension is a characteristic important to water's movement through soil and conductive tissues of plants.

Water is so basic to us, to our existence that we take it for granted; we think of it in terms of simplicity yet few things are more complex, nothing more essential. □

by Martha Sutton

# Traplines

## A trapper shares his wit and wisdom.

*Be it known to all men that William Kindervater is elected to the Trapper's Hall of Fame. Recognition is pleasantly granted to this man for his unselfish contribution, major achievement, uncommon skill and tremendous pride as a trapper. His character is greatly appreciated by good men everywhere who live in harmony with the earth and its creatures.*

**S**o reads the proclamation inducting Virginian Bill Kindervater into the Trapper's Hall of Fame. Don Shumaker, editor of *The Trapper*, presented a plaque to Bill December 27, 1983 in Richmond. Bill has been trapping for 60 years and is a master at it. As this award shows, Bill's reputation as a great sportsman is not limited to the Old Dominion.

He's trying to pass on some of his knowledge, skill and appreciation of trapping and the outdoors to his grandsons. Although his daughter is wary of eating at his house—she doesn't care for beaver or muskrat meat—he has won over her son. "Beaver meat is as good as any beef you ever put in your mouth. I can't get people to believe that, unless they try it. [My daughter] is afraid I'm going to fool her. But her son is right with me. He loves to try anything. He'll just dive right in and eat anything like that that I give him."

He said that he had just prepared some muskrat meat one day last trapping season when his grandson and a friend came in. "I asked them if they wanted some muskrat. They said, 'Yeah, let us have some.' So I warmed it up, and, you know, they cleaned it up."

Bill has three grandsons, all of whom live within five miles of his home in Henrico County, who share this interests. "Only one takes to trapping and the other two take to hunting and fishing a lot. They're mighty good at it. One grandson, he outfishes everybody." His twin sons, he said, began hunting with him when they were five years old.

Bill lives within a mile of his childhood home where he began trapping when he was 12 years old.

*(Bottom, left to right) Bill demonstrates the method for setting a conibear trap; this size trap is used as an underwater set for beaver.*

One purpose of trapping, he said, is to control the damage that certain animals do to the environment. "Raccoons cause a lot of damage in cornfields; muskrats do a lot of burrowing in pond dams; otter catch a lot of fish; and beaver flood woodlands and fields and cut timber."

Marshes cannot support a large population of muskrats, he said. "Muskrats eat up all the marsh and leave no food for the ducks. If they're harvested like they should be, the grass will grow and hold the marsh, and it won't wash away."

Trapping also helps control diseases, Bill said. "It cuts down on the overall amount of wildlife. When they get too thick, that's when diseases such as mange, rabies and distemper break out."

He has a theory about the outbreak of rabies in the northern part of the state. "It comes from an overpopulation in the fox-hunting country where most people wouldn't allow any trapping because they're afraid to



VCGIF photos



(Left) Bill with a smaller conibear used to trap muskrats; (below) 'Coon, fox and muskrat pelts on stretchers.



catch a fox, but that's the best thing in the world that could have been done. Foxes and raccoons increased to the point that rabies got into them, then it spread. They said it would be in the Richmond area by Christmas, but I haven't heard any more about it."

Nevertheless, as a precaution, Bill got a rabies vaccine. "They advise everybody to do that if they come in contact with any type of wildlife, but a lot of people are afraid they'll have a reaction to it."

The shot, he said, is painless. "You hardly notice it when you take it. There are no after effects whatsoever. When I took my last shot, the girl at the health department asked me if I had any reaction to it. I said, 'Yeah, I really did. I went over to my daughter's the other night and instead of knocking, I scratched on the door.'"

Despite his humor, Bill said that the threat of rabies is something people should take seriously. "There's always a danger of it. It's a virus and can travel so easily."

In addition to preventing disease, trapping, he said, can prevent starvation that results from overpopulation. "Some people who are against trapping say that we should have a balance of nature. But we can't have a balance of nature anymore. Man upset that long ago. We don't have the big predators that we once had. The bears, wolves, mountain lions and bobcats have been practically eliminated. It's up to man to take care of the smaller things that the predators would have fed on if they were here."

Many small game hunters, he said, are not aware of how trapping benefits them by limiting the number of predators such as foxes and minks that they must compete with.

For example, in the spring, when a pair of foxes has a litter of four to eight to feed, he said, "they will just about make a desolation of wildlife within a mile of the den. . . I have found nothing but bones and feathers around a den. A lot of hunters find our traps set and will pull them up and throw them in the brush on in the river and don't realize the good we are doing them when we catch those things. They are also breaking the law when they do it."

Bill re-emphasized the important role man plays in maintaining a balance of nature. "There's no way you can stockpile wildlife. You've got a carrying capacity of the land, and that's all it's going to carry. If any more moves in, somebody's got to give and make room for some more and there's no room for them. They're just going to catch disease or else starve."

"It's just like if you put half a dozen cattle in a lot. If you don't take any cattle out, they can just increase until there's so many in a few years' time that there's not enough feed for all the cattle."

Trapping, he said, is one way in which man can restore a balance of nature. "A lot of people think trapping is cruel. But trappers are required to check the traps every 24 hours, and we try to get there early in the morning so we can avoid an escape. Generally speaking, the animals travel just before daylight, so they're in the trap just a matter of a few hours. That's nothing in comparison to the suffering of an animal that has disease."

"I've seen foxes with mange in the wintertime and not a handful of fur on them. They are terrible-looking things, and, when it gets cold enough, they'll freeze to death. It's awful, but that's what happens when they get too thick. Nature takes care of it and controls the species."

Overall, Bill said, he has been more than satisfied with Virginia's supply of wildlife. "I've shown pictures of things that I have caught to friends of mine in Pennsylvania, and they said, 'Well, gosh, a trapper in Pennsylvania wouldn't catch any more than that in a whole season,' and I had caught all of that in a day."

He attributes this difference to Pennsylvania's greater number of trappers and shorter trapping season. He said that Virginia's trapping season usually runs December 1 to February 28. Muskrat season for areas east of Interstate 95 is December 5 to March 10, he said, and a few counties allow fox trapping in November. "That's too early," he said. "The fur hasn't primed up."

Bill is a charter member of the Virginia Trappers Association, an organization that recommends trapping seasons to the Virginia Game Commission. "We started out with 23 people in 1966." Among other things, the organization tries to eliminate unnecessary cruelty in the use of steel traps.

Bill said that, for foxes, he uses a size 1½ foothold trap instead of the leghold trap which was more popular several years ago. He said he prefers the foothold because, should a dog get trapped in it, it would not hurt its leg.

For otter and beaver, he uses a body-gripping trap. "I caught one otter this year in the outlet of a little pond. I was trying to catch beaver out of the ponds. I set a small trap in the outlet in case a beaver decided to go out, and lo and behold, I caught an otter coming in."

Trapping isn't as profitable as it once was, Bill said. "A lot of people have given it up. I trap more for the pleasure of it, just to get outdoors and do something. There have been years when I have made some money at it, but at present prices, it can't be done. The overhead will eat up what you make."

The biggest expense of trapping, he said, is travelling to and from the traps each day. "I usually have to travel anywhere from 25 to 40 miles one way. You can see what kind of expense that is. Some days you catch, and some days you don't."

Bill usually sells his pelts to a travelling fur buyer at the end of the season, he said, but added that some trappers prefer to sell at a fur auction.

Fox, he said, is the most valuable pelt he traps. "Three years ago fur was up as much as 65 or 70 dollars. This year they're down to about 35 dollars."

For those interested in taking up trapping as a hobby, Bill guessed that one would have to make an initial investment of \$150 to \$200. He recommended that beginners take a trapper education course and attend the annual convention of the Virginia Trapper's Association to be held early next October in Dublin. He said that at the conventions they have demonstrations in skills such as trapping, skinning, fleshing and stretching. If a beginner needs more help, Bill suggested that he contact his local game warden.

Bill, who worked with Virginia Dairy Company for 43 years, enjoys hunting and fishing as well as trapping. Most weekends, he said, he does one or more of these activities.

He fishes in private ponds and in the Chesapeake Bay, and has hunted throughout the state. His preferred game, he said, are deer and turkey. "I used to love to hunt rabbits, but rabbits are so scarce I've given it up. And there's too much walking involved in bird hunting, so I gave that up. So now I sit down and let the deer come to me and I call the turkeys to me." □



Screech Owl, *Otus asio*

# *A Bird's Eye View*

*Close-ups of some of Virginia's  
popular residents and visitors.*

*A photo essay by Mike & Dorothy Mitchell*

**T**he birds are back! Joining the cardinal, who remains in Virginia year-round, is the scarlet tanager. The male scarlet tanager, a winter inhabitant of South America, resembles the male cardinal but has black wings.

Like the cardinal, the screech owl is common to a variety of habitats. It can be found in woodlots, forests, swamps, orchards, parks and suburban gardens.

The blackburnian warbler, most common west of the Blue Ridge, usually stays high in the upper branches of trees. His song often is composed of a short series of seet-say notes followed by a very high trill.

The colorful European starling is not as musical, but may be found, usually in large flocks, throughout the state.

The yellow-breasted chat is no more musically inclined than the European starling. But the male will sing, from a conspicuous perch or hovering in the air, oblivious to his lack of talent.



Starling, *Sturnus vulgaris*



Eastern Bluebird, *Sialia sialis*



Cardinal, *Cardinalis cardinalis*





Scarlet Tanager, *Piranga olivacea*



Blackburnian Warbler, *Dendroica fusca*  
Yellow-Breasted Chat, *Icteria virens*



The eastern bluebird greets spring with his "chur chur chur-lee" and can be found in open woodlands, farmlands, and orchards. He nests in holes in trees and posts and in nest boxes.

You probably won't get as close to these birds as this photographer's lens did, but it's fun to watch them, anyway.—Martha Sutton



# The Blaze Orange D I L E M M A

Blaze orange, as dramatized during the 1983-84 season, protects deer hunters, without depriving them of game. But what about the turkey hunter? His is a more difficult choice.

by Jack Randolph

**T**here were 17 standers on the line and I could see most of them from my position on a ridge in a recently burnt-over forest. Each one of them, clad in a blaze orange hat and vest, was clearly visible against the somber black of the burnt forest.

I could hear the drivers coming, whistling, shouting and calling out their assigned numbers to keep their line straight. They were in a part of the forest that had not been touched by fire, driving toward us.

It was the last drive of the 1983-84 hunting season and both of my deer tags were securely attached to my license. I was hoping that this last drive would use up one of them. My fortunes suddenly looked very promising as a pair of deer appeared on the edge of the burn over.

With mincing steps they cautiously approached the line of standers. A dozen pairs of eyes were on them as they stopped and surveyed the open woods. If they could see color they certainly would have seen the standers. But, after putting all of the area around them under the deer microscope, they proceeded to walk to within 30 feet of the stander to my right, who bagged one of them with one shot.

This was just one of many experiences in my hunting career that reinforced my belief that deer cannot see blaze orange or bright colors. I have had them run over me while I was clad in a bright red or blaze orange coat, and after many such encounters I have become completely confident that safety colors do not affect my chances of bagging a deer so long as I remain perfectly still on my stand.

Many Virginians are coming around to this way of thinking. During the past hunting season, game wardens passed out 10,000 blaze orange vests to hunters who were seen hunting without protective colors. Sporting goods stores have reported that sales of blaze orange clothing have skyrocketed and field observations confirm that more hunters are wearing blaze orange than ever before. But the most welcome proof of a new awareness

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*(Opposite page, top photo) This turkey hunter has elected to wear a blaze orange sash, believing that this will be enough to alert another hunter but not enough to alarm a turkey. If he is perfectly still, he has a good chance of calling in a turkey. (Opposite page, bottom photos, left to right) You can see the dramatic difference in visibility of the same hunter—in the same position—with and without blaze orange; a good compromise is to place a blaze orange band around a tree, thereby alerting another hunter to your presence, but avoiding alarming the turkey.*

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in hunting safety is the reduced number of hunting fatalities. As this is written in mid-January of 1984, only five fatalities have been confirmed as opposed to 17 at this time last year.

**E**very hunter has his own ideas about what he should wear in the woods. While I wouldn't hunt deer or be in an area where deer are being hunted with guns without blaze orange, some persist in wearing their camouflage garb. They have a point in saying that every hunter is responsible for his target, but the fact that we still have hunting accidents is mute evidence that not every hunter is responsible.

To this day I shudder when I recall an incident that took place in the mountains of another state some years ago. I was on a high ridge when I noticed a bear climbing another hill within rifle shot of me. It was a long shot but still possible.

As the bruin climbed up the hill on an angle I selected the spot where it would come closest to me and I waited, but having never seen a bear in the woods before I decided to watch it awhile through my binoculars so I could enjoy just seeing it.

When I put the glasses on that animal it suddenly turned into a man, crawling up the hill on all fours, dressed in a red and black plaid hunting suit which looked all black at a distance.

I broke out in a cold sweat thinking what could have happened. Certainly I was responsible for my actions, but that fellow didn't help any.

There was another instance, when I was still hunting deer in the mountains of Pennsylvania. It was snowing and I was having great fun tracking and trying to ambush a deer. The area was overrun with them, but I couldn't find anything with antlers.

My technique that day was to find a hot trail, follow it for awhile and then guess which way the animal was heading, then move cross-country, hoping to cut it off.

I was on such a maneuver when I topped a ridge to find a nice buck coming along a ridge in front of me. As I raised the rifle to fire I caught a glimpse of red. Another hunter was about a hundred yards beyond the deer and in a position where, if I shot, I could hit him. His protective clothing saved me from a potentially dangerous situation.

Twice in my life I have had turkeys approach me while I was dressed in brightly colored clothing. Once I was dragging out a buck and had stopped to rest when a huge gobbler walked right up to me. By the time I sorted things out that bird was in high gear. I got one of his tracks with the first barrel and a pine tree with the second.

Two years ago, in Surry County, I was on a deer stand dressed in blaze orange when a hen turkey landed in the very tree I was leaning against. The bird stayed there until I prepared to leave the stand.

However, a test conducted by Game Commission biologists last spring does not confirm my experiences. Because of the growing number of hunting accidents during the spring gobbler season, the Commission wanted to see if it were desirable to ask hunters to wear blaze orange clothing.

We obtained 50 vests, mottled black and blaze orange.



Leonard Lee Rue III

*Will this turkey spot you if you're wearing blaze orange? Probably. Will another hunter see you if you don't? Probably not. To wear safety colors or not is an important decision for each hunter to make.*

These were distributed to 50 hunters, most of them members of the Wild Turkey Federation, who cooperated in the project. Commission biologists also participated in the program.

As you may remember, last spring was a difficult one for the turkey hunter. Cold, wet weather made it extremely difficult to call in birds. Many hunters reported that they found turkeys, but couldn't call them in.

The participants in the test hunted while wearing the vest and while not wearing the vests. Hunters operating without the vests found 80 gobblers and were successful in calling 49 of them in to gunshot range. Those wearing the vests found 99 birds and called in 23 of them.

Obviously the hunters operating without the vests were more successful by a long shot. Most hunters who wore the vests are convinced that the turkeys can detect the color and hunters wearing the blaze orange are operating under a handicap.

This test was coordinated by wildlife research biologist Jack Gwynn, who as usual, did an excellent job.

Some hunters maintain that it is not the blaze orange, *per se*—or the form of a man—that alerts a turkey. Even if a gobbler sees your brightly colored vest, he's not bright enough to figure out what it is, or what you are. What tips off a turkey is *movement*. So, if you don't want to take any chances with your safety, wear blaze orange—but know that you must remain absolutely still.

Another alternative is depicted in one of the photos printed with this article: tie a blaze orange sash around a tree trunk in the area where you are sitting and calling in your turkey. It won't call the turkey's attention to you, but it'll alert other hunters that there's a human being trying to sound like a turkey in their vicinity.

It appears that the secret of safe spring turkey hunting lies with the hunter. Most accidents occur because the shooter simply knows nothing about turkeys and less about safety.

A typical spring turkey hunting accident involves some character "stalking" through the woods, hearing a turkey and shooting into brush when he thinks a turkey is hiding.

Notwithstanding that no one shoots at something he cannot see, somewhere along the line this guy has gained the impression that he can sneak up on a calling turkey. I believe I'm pretty safe in saying, if you can sneak up on it, it isn't a turkey!

**S**hooting into the brush at a target you cannot see constitutes reckless handling of a firearm which can draw a fine of up to \$1,000 plus loss of hunting license for up to five years. This is in addition to whatever civil penalty is awarded the victim when, taking a dim view of being shot, he sues you.

It looks as though we have turned a corner concerning hunter safety. One can sense a new awareness among hunters, but we can't let up. Hunter safety courses are now being taught across the Old Dominion. They are not only for the kids. We older hunters can stand a refresher, or better yet, how about having your local hunter safety instructor visit your club and present a course? Believe me, hunting is a safe sport, but we can make it even safer. □



Leonard Lee Rue III

*This turkey hunter opted for camouflage; he has a better chance of calling in a turkey, but he also has a better chance of being the victim of another hunter's poor judgement.*

# Tree of Legends

The dogwood is not only Virginia's state flower, it is the subject of many stories and legends.

by Dorothy Beecher Artes



Wendell Ayers

**W**hen Virginia and North Carolina decided on the flowering dogwood for their state flower, they chose not only a beautiful flower, but one of many uses and many legends.

The small clusters of scarlet fruit which appear on the branches in the fall are eaten by wild birds including the ruffed grouse, bobwhite quail and wild turkey. The seeds are often eaten by squirrels, chipmunks and lesser rodents. This fruitful tree provides food for wildlife up into December.

The berries yield an oil that was used in lamps in earlier days, and the wood made a superior charcoal for the manufacture of gunpowder.

The Indians of the United States made an extract of the bark which they gave to warriors feavered with battle wounds. The colonists used this medicine for malaria with good results; today we know it contains the principle of quinine. This knowledge was particularly valuable to the Confederacy during the Civil War when the blockade cut them off from South American sources of quinine.

The Catawba Indians said the raw berries were good for chills. Rough dogwood or real-arrow tree was used by the Dakota and Pawnee Indians for the shaft of arrows, and by the Chippewa to lure muskrats, and as a remedy for sore eyes. From the bark of the smaller roots, Indians made a red dye. The split ends of small branchlets were used as toothbrushes. They are said to whiten the teeth exceptionally well. In Newfoundland and among some North American Indians, children were passed through the limbs of the

dogwood to make them immune to children's diseases and as a cure for rupture. Those cured in this way were supposed to feel acute pain when dogwood sticks were burned in the fire.

In the southern mountains, early American settlers made an essence of the bark, a few drops of which in a tumbler of whiskey were considered very healthy.

The wood of the flowering dogwood is extremely hard, strong and tough. It is the main wood used for the shuttles which are employed in weaving. This wood is also used for various turned articles: tool handles, mallet heads, golf club heads and jewelers' and engravers' blocks.

The inner bark is very bitter and sometimes used medicinally in tonics. Oil extracted from the fruit of the blood-twig dogwood is used in France for making soap. The hard, white, fine-grained wood of the the Pacific Northwest dogwood is used for inlaying.

The dogwood tree is surrounded by myth and legend. One old Nanticoke Indian legend tells of a greedy old Indian chief with four daughters. Because of his greed, he was turned into a dogwood tree by the gods. His four daughters are the four white bracts.

In Tennessee it was said that if you chewed dogwood you would lose your sweetheart.

The Judas tree, connectd with the death of Christ's betrayer, has been identified as the dogwood (also the elder, ash, fig and tamarind trees) on which he hanged himself.

Why a plant genus as lovely as the dogwoods has been



White dogwood

VCGIF photo

Dogwood in autumn foliage

Met White

Pink dogwood

Spike Knuth

given such an uninspired sort of common name is something of an enigma. One theory is that the bark of one of the European species, well boiled in water to produce a strong decoction, was once used as a wash for mangy dogs, certainly a practical purpose, if not exactly aesthetic. In any event, the term is applied nowadays to all species, whether tree-like or shrubby types.

There is an old myth that the dogwood's snowy flowers date from the spring day when Pierrot (a buffoon-type legendary character), climbing a ladder to brighten the moon's face with whitewash, accidentally tipped his bucket high in the sky and spattered the trees below with its contents.

Perhaps the most familiar legend associated with the flowering dogwood is the one related to the crucifixion of Christ. Up until that time, the dogwood had been the size of oaks and was so strong and firm that its timber was chosen for the cross. The tree was distressed at being used for so cruel a purpose. Christ, nailed upon it, sensed the distress. In his gentle pity for all sorrowing and suffering, he said to it, "Because of your regret and pity for my suffering, never again shall the dogwood grow large enough to be used as a cross. Henceforth, it shall be slender and bent and twisted, and its blossoms shall be the form of a cross, two long and two short petals, and in the center of the outer edge of each petal there will be nail prints, brown with rust and stained with red; and in the center of the flower will be a crown of thorns and all who see it will remember."

Contrary to this legend, some dogwood in the Pacific Northwest grow to 75 feet, or even taller. The native American flowering dogwood (*C. florida*) is rarely more than three feet tall. Of the estimated 25 species that grow in Europe, Asia and North America, nearly all are showy shrubs or small trees. A few species are herbs.

Dogwood trees are frequently found on summits over 4,000 feet high. They are found growing from southern Maine to southern Michigan and Illinois, south to Florida and Texas.

**F**or some less-legendary facts about the flowering dogwood, cross-fertilization is effected mostly by bees and bee-like flies. It has several enemies, the most serious one being the borer. This pest is most likely to attack the trunk and larger branches. The borer leaves tracks or markings called "frass" or "sawdust" that show readily. There are several preparations available at good garden supply stores which can be injected in the scarred area.

The flowering dogwood is a very popular ornamental tree. It is enormously attractive in bloom, in fruit and in foliage. It is a fine early-seasoning flowering tree. All summer, the foliage is lively, a sort of two-toned green. In autumn it assumes deep purple-wine tones. Then it turns to elusive mauves and lavenders dotted with small grey buds for the next spring's blossoms. An alert eye in snowy, winter woods can see the promise of spring very early in the flowering dogwood. □

story and photos  
by Harry W. Murray

# Reach For the *Nymphs*

If you want to consistently take trout when the season opens April 14, duplicate what nature is doing.

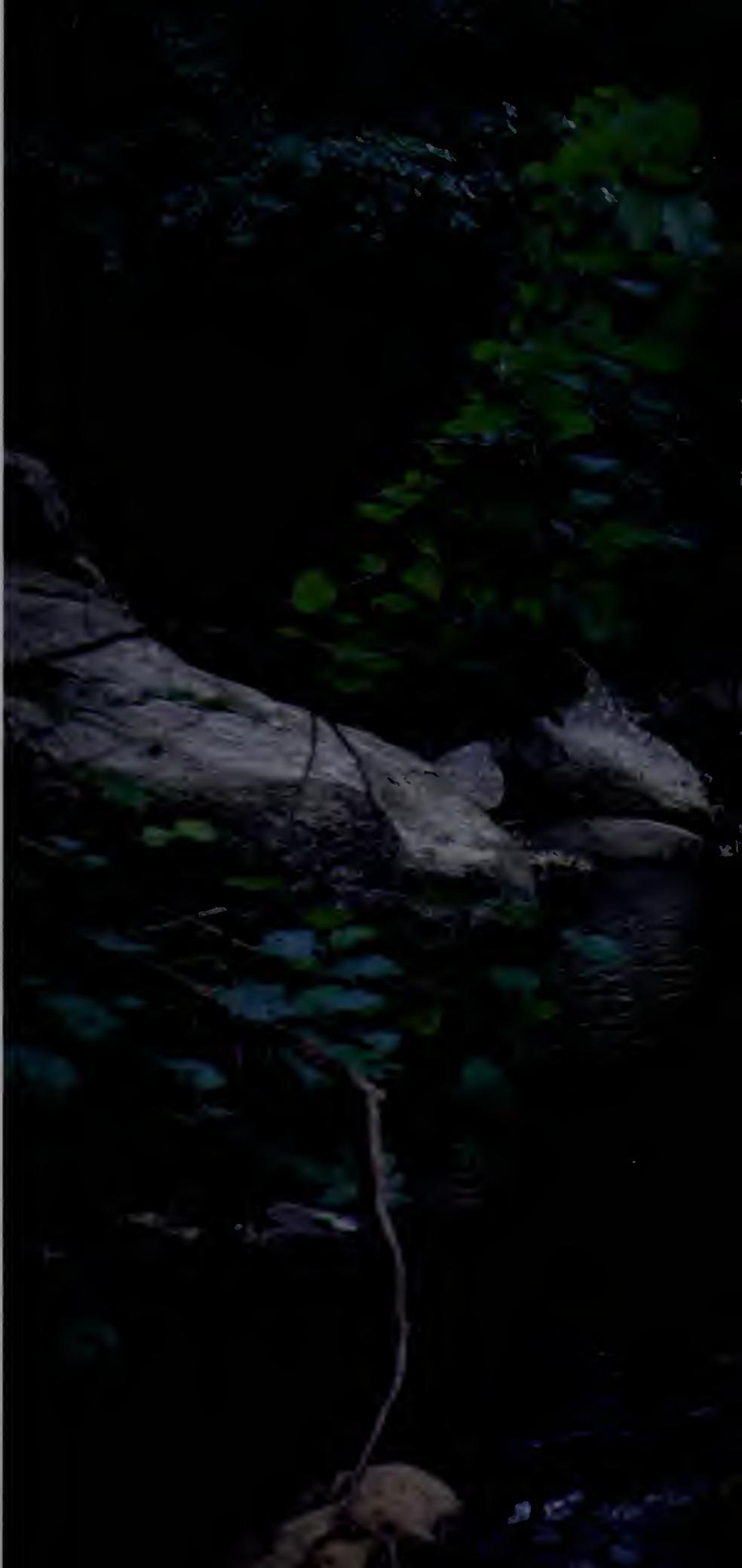
**J**could hardly believe how cold the water felt as I waded into one of my favorite trout streams last spring. The unusually cold nights of early April had dropped the water temperature down considerably lower than normally found at this time of the year. There were no rising fish to be seen anywhere. Carefully watching the water I found the logical reason for this inactivity. There were no hatching aquatic insects to bring the trout up.

As I stood there considering the best way to fish this stream, I remembered a similar situation about 20 years earlier.

I had only recently taken up serious trout fishing at the time and was fortunate to have Jack Sperry as my tutor. Jack did not have to work for a living which had allowed him to fish almost every day of the season for 30 years. I knew there was a lifetime of stream study and in-depth evaluation in his suggestions that day. Jack said, "If you want to be consistent in taking trout you should try to duplicate what nature is doing."

This advice was just as good that day last year as it was when I was a beginner 20 years ago. The cold water was keeping the aquatic insects close to the stream bottom. The mayfly and stonefly nymphs and caddis larvae were all there in large numbers, maybe even in larger concentrations than normal because some of the mayflies which usually start hatching before this had been held back by the cold water.

I checked several riffles very care-





fully and sure enough, they were loaded with nymphs. We were fortunate not to have had any really high water the previous spring when the adult flies were laying their eggs and a very large percentage of the delicate eggs had hatched and made it to the full-grown nymph stage. These two factors, a high survival rate and the late cold water had resulted in one of the greatest concentrations of aquatic nymphs I had ever seen in our streams.

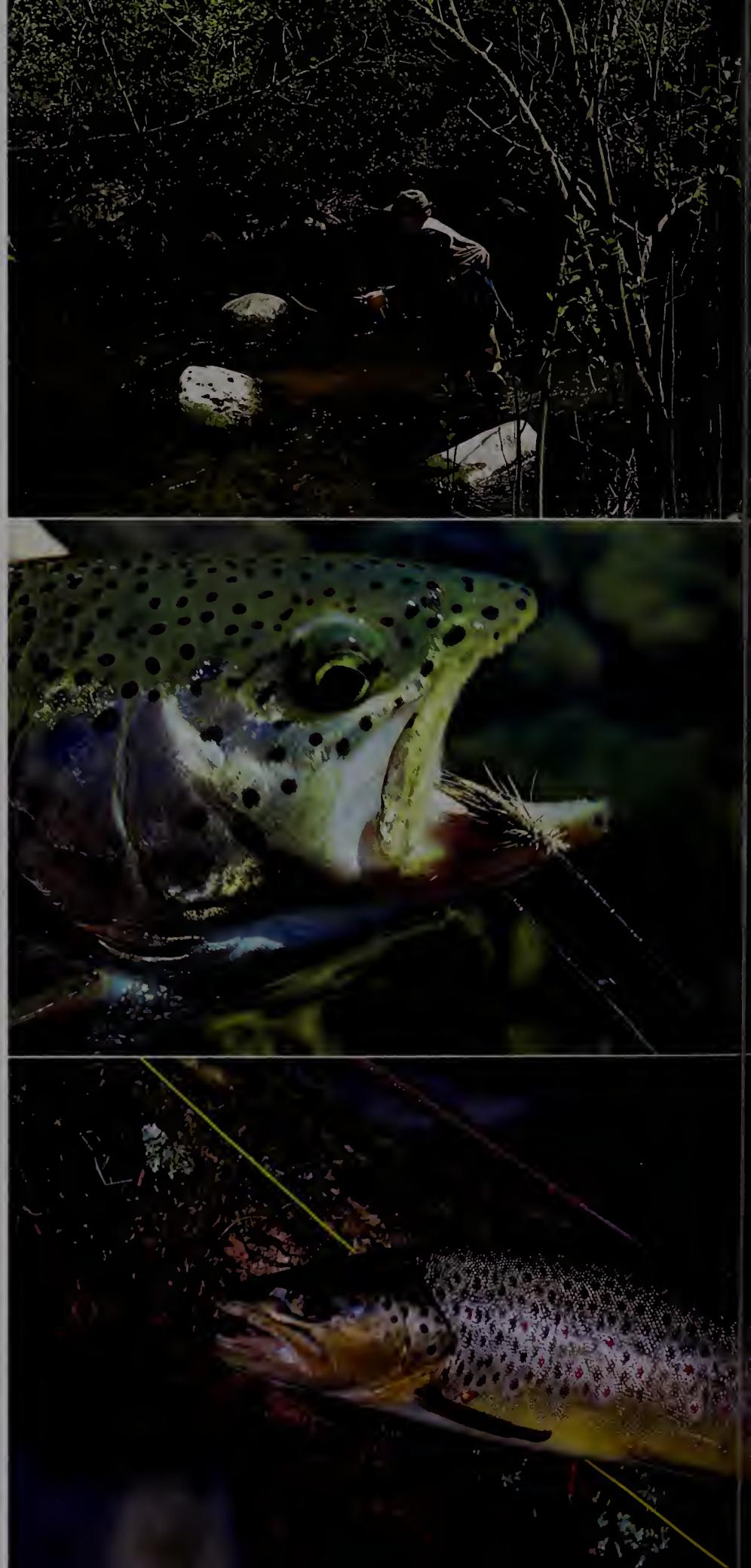
*(Photos, right, top to bottom) Early season trout fishing usually means long sleeves and other cool-weather garb; nymphs are what will fool trout this time of year—this rainbow trout bit; brown trout.*

**C**onsidering the wide variety of natural nymphs and larva from which the trout could choose, I felt I did not have to be too specific in the selection of an artificial nymph to use and still stay within Jack's guideline to duplicate nature. Still, considering the cold water, I wanted to give the trout a large enough mouthful to make his efforts worthwhile. With all those naturals down there, I felt a large imitation might be more quickly selected. Watch a youngster when a plateful of chocolate cake is passed. He'll take the largest piece.

A large natural aquatic insect in our trout streams is the cranefly larva. The previous winter I had developed an imitation for this natural insect for my fly tying class at Lord Fairfax College. I cast this big grub-looking fly up into the head of the pool. Being well weighted, it went right to the bottom. As it drifted back into the deepest part of the pool I saw a slight twitch in the leader. Quickly I set the hook with both my line hand and rod. As I landed the trout, I saw that a large male brookie had given my selection his nod of approval. He was only the first of many nice trout which readily accepted deeply sunken nymphs that day.

Experimenting to see which other nymph might do the job, I used about eight separate patterns throughout the rest of the day. Not all of the imitations were taken by the trout, but the gold ribbed hare's ear, the Mr. Rapidan emerger and the black C.K. nymph did a good job. Sizes 10 and 12 were by far the best sizes and those which I had tied well weighted did a better job than their unweighted counterparts.

There are two separate stages of nymph fishing which must be mastered to bring a reasonable degree of success.



The first part of this consists of an accurate analysis of the pools and currents within each pool and pocket. Simply looking at a pool and telling ourselves there has to be a good trout over in front of that big boulder is not enough. Certainly this is something we must learn. But, if one does not know where to cast the nymph in order to get it to drift naturally down on the trout's level as it approaches his boulder, the strike will never come. Though this may sound involved it does not require four college courses in hydraulics to be mastered. By using common sense and experimenting, you will soon have your nymphs drifting right down to the trout's dinner table.

If you think in terms of wanting the artificial nymph to drift naturally as if it were not attached to the leader, you are on the right track. By carefully studying the way the currents move within a particular pool, we can determine the natural lines of drift. Casting a nymph to the upper end of these areas and trying to keep the leader restricted to only that part of the current, we will get the drift and depth we want. Once the cast is made and the nymph is drifting back downstream, it is possible to raise the rod tip and manipulate the drifting line and leader to help assure a good presentation. This manipulation of line and leader is referred to as "mending the line." It is an essential skill for the serious angler and is well worth learning.

There are several indicators that you are not controlling drift or fly placement properly. The first is when known holding waters fail to produce. Trout will seldom take an artificial nymph coming through the pool twice as fast as the natural. The one discrepancy here is that one trout who acts as if he is trying to commit suicide. He'll take it no matter how bad our presentation is and we'll think we have our act together when the opposite is actually true.

**A**nother way to tell all is not as it should be is when you get your flies only part of the way down to the stream bottom. The current is actually pulling on the leader, forcing the artificials up off of the bottom—if they ever got there in the first place. This is readily detected when you get a "snap the whip" action at the end of a drift. This actually started long before you were aware of it, by the fast current grabbing the leader and pulling it ahead of the fly as it comes down the pool. Often I am only aware of this as the entire cast surfaces at the end of the drift.

The second stage of nymph fishing which must be mastered is detection of

the strike when it occurs. This is where many of the anglers in my fly fishing schools seek help. They finally master the casting, line control and leader manipulation to get the nymph down to the trout and then cannot detect the delicate strike as the fish picks up the fly.

The major reason for this problem is that an excess of slack line exists between the nymph and the farthest part of the line or leader we can see. The trout actually picks up the nymph, and realizing it is a phony, rejects it before you know he's there. Unfortunately this slack leader close to the nymph can often exist without your knowing it. By analyzing two of the main causes we can help prevent this problem before it occurs. Last spring I was guiding a fellow who was determined to become a good nymph fisherman. He was a fairly good caster, but for some reason, at the completion of his cast he could not recover the excess slack fly line on the water as the fly started drifting back to him. Standing immediately beside him and going through the routine did not help at all. Finally I took his rod to see if I could find the problem. That was it. Though the rod had a good strong butt, the tip was very soft and wiggly. The fellow had been trying so hard and casting with such force that at the completion of the cast the rod tip just kept wiggling. Each of these wiggles threw a slight curve in the fly line as it went forward. By the time it reached the forward extension of the cast there was more line on the water than anyone could pick up. By working with the angler to cast with less force and to cast more off the butt of the rod and not so much off the tip he was able to get things under control. He finally succeeded in taking quite a few nice fish on nymphs.

The second and most common cause for the excess slack line when nymph fishing is that 90 percent of the anglers trying it are fishing too long a line. This is only natural since the first goal of all beginning fly fishermen is to cast farther and farther and farther. This is fine in some dry fly, bug fishing and when fishing streamers down and across stream, but it will ruin your chances in nymph fishing. Most successful nymph fishing here in Virginia will be done with casts of 20 feet or less. By reducing the length of the cast and concentrating on controlling the line as it drifts back to you, you are well on the way to accomplishing your goals.

After many years of trial and error, I have developed a system which works pretty well. I cast straight upstream or up and across stream. The instant my nymph hits the water, I quickly strip in

all excess line with my line hand. I actually recover enough line to move the nymph slightly. Using this maneuver, I know that at least at the beginning of the drift there is no unwanted slack line to prevent me from knowing when the trout picks up my fly. As the nymph drifts back downstream, I strip in the line at the same rate the current is moving it. I actually try to retain the tight contact I had at the beginning of the drift. Once this is accomplished, I closely watch that part of the fly line or leader I can see which is closest to the nymph. Any unnatural movement or hesitation in the leader is the signal to set the hook. This strike by the trout is often so subtle that I find myself successfully setting the hook into a good fish without even being consciously aware that he had picked up my nymph.

There are a few refinements in tackle which help tremendously in strike detection. A brightly colored fly line coupled with a leader utilizing a bright fluorescent butt enable us to see the slightest strike much more easily than the conventional line and leaders. Some type of indicator added to the leader about three feet above the fly is even a greater help. As well as being highly visible on the surface, an indicator of tow yarn or line material can be seen several feet under the water. Watching this provides the maximum control in strike detection.



**T**he same fly rod one would use in other forms of trout fishing will work here. The one factor to keep in mind is the need for line control after the cast is completed. This means using the longest fly rod practical for a given stream. On our small mountain streams, a rod 7½ feet long is about all you have room for. When nymph fishing our larger streams such as the Jackson River and Big Stony Creek, a rod nine feet long will give excellent drift control. These rods should balance with a double taper or weight forward floating fly line in the four, five or six weight range. Leaders that are about eight feet long and tapered to 3x or 4x are what we want for these big nymphs. The patterns which have been most consistent for me early in the year are the cranefly larva, G.R. hare's ear, lynx tails, Mr. Rapidan emerger, quill gordon, and black C.K. nymph. I like all of these tied with lead in the body and on a size 10 and 12 long shank hook. Most anglers prefer light weight single action fly reels for this type fishing.

The next time you find low water temperatures, consider what nature is doing on the stream bottom. Reach for the nymphs and dig out some good trout. □



# 1984 Trout Stocking Plan

by Robert E. Wollitz  
Supervising Fisheries Biologist

Another trout season is at hand and angling prospects look good for the coming year, although a few changes will be evident.

On June 1, 1983, the U.S. Fish and Wildlife Service terminated their operations at the Paint Bank and Wytheville National Fish Hatcheries. Operation of these two trout hatcheries was then transferred to the Commission of Game and Inland Fisheries. This has placed an additional burden on the Commission. Five hatcheries are now being operated with the same manpower as was formerly required to operate three hatcheries, and the additional operating costs involved have placed a severe strain on the fish division budget. In order to offset these costs and reduce the manpower strain, the fall trout introductions in all waters will be discontinued. This will include National Forest streams and ponds formerly stocked from federal hatcheries. Also, the stocking of two National Forest streams which have traditionally received extremely low fishing pressure has been discontinued. These are Downey Creek in Alleghany County and Mill Creek in Augusta County.

Stocking periods will be similar to 1982 and trout will be stocked March through much of June. Trout will be introduced during four periods: (1) Preseason (March); (2) April 9-30; (3) May 1-23; and (4) May 29-June 8. Any surplus which may exist after all of the allocations are met will be stocked during the remainder of June.

Approximately the same number of streams (166) and ponds (55) will be stocked in 39 western Virginia counties. To date only five streams have been lost due to posting: No Business Creek in Bland County, Hurricane Fork in Buchanan County, Green Creek in Franklin County, Tom's Creek in Montgomery County and Glade Creek in Roanoke County.

To aid the fishermen in planning his fishing trips, a table listing the tentative inseason date that each stream is to be stocked is included in this year's stocking plan. For the most part, these dates will be strictly adhered to. However, fishermen should realize that truck breakdowns, low streamflows and certain other unpredictable circumstances may occasionally cause departures from this schedule. When this occurs, the changes will be publicized ahead of time when possible. □

## LEGEND:

\*—National Forest Waters

B—Brook Trout

R—Rainbow Trout

Bn—Brown Trout

<sup>2</sup>—Brook stocked after November 1

	Preseason	April 9-28	April 30-May 19	May 21-31
<b>ALBEMARLE COUNTY</b>				
Moormans River (N. & S. Forks)	B,R	B,R	R	
City Water Works (Sugar Hollow)	R	R	R	
<b>ALLEGHANY COUNTY</b>				
Smith Creek*	B	B	B	
Pounding Mill Creek*	R	R	R	
Jerry's Run*	R	R	B	
Clifton Forge Reservoir*	B	B	B	
<b>AMHERST COUNTY</b>				
Pedlar River (Upper)	B,R	B,R	R	
Pedlar River (Lower)	R,Bn	R	R,Bn	R
Piney River (S.Fork & Proper)	B	B	B	
Brown's Creek*	B	B	B	
Davis Mill Creek*	B	B	B	
Little Irish Creek*	B	B	B	
<b>AUGUSTA COUNTY</b>				
Back Creek (S.Fork & Proper)	B,R	R	R	
North River (Gorge)	R	R	R	
North River* (Upper)	R	R	R	
Falls Hollow* (Buffalo Branch)	R			
Ramsey's Draft*	R	R	R	
Braley Pond*	R	R	R	R
Back Creek*	R	R	R	
Upper Sherando Lake*	R	R	R	R
Lower Sherando Lake*	R	R	R	R
Hearthstone Lake*	R	R	R	R
Elkhorn Lake*	R	R	R	R
<b>BATH COUNTY</b>				
Bullpasture River	R,Bn	R,Bn	R,Bn	R
Jackson River (Hidden Valley)	R,Bn	R,Bn	R,Bn	R
Spring Run	B,R,Bn	B,R,Bn	B,R,Bn	R
Back Creek*	R	R	R	
Wilson Creek*	B	B	B	
Pads Creek*	R	R	R	
Jackson River* (Route 623)	R,Bn,	R,Bn	R,Bn	R
<b>BEDFORD COUNTY</b>				
Hunting Creek*	B		B	B
<b>BLAND COUNTY</b>				
Hunting Camp Creek	B,R	B,R	B,R	R
Lick Creek*	R	R	R	R
Wolf Creek	R,Bn	R,Bn	R,Bn	R
Laurel Fork Creek	R		R	
Lick Creek	R		R	
<b>BOTETOURT COUNTY</b>				
Jennings Creek	B,R	R	R	R
Mill Creek	R,Bn	R,Bn	R,Bn	R
Roaring Run	R,Bn	R,Bn	R,Bn	R
North Creek*	R	R	R	R
Middle Creek*	R	R	R	
McFalls Creek*	R	R	R	
<b>BUCHANAN COUNTY</b>				
Dismal River	B,R	B,R	B,R	R
<b>CARROLL COUNTY</b>				
Big Pauls Creek	B	B		
Little Reed Island Creek	R,Bn	R,Bn	R,Bn	R
Stewart's Creek	B	B		
Big Reed Island Creek	B,R	B,R	R,Bn	R
Crooked Creek	B,R	B,R		
Burkes Fork	B,R	B,R		R

	Preseason	April 9-28	April 30-May 19	May 21-31		Preseason	April 9-28	April 30-May 19	May 21-31
Laurel Fork Creek	B	B	B	Poorhouse Creek		B			
Snake Creek (Fish-for-fun)			R, Bn	Big Ivy Creek		B, Bn			
CRAIG COUNTY				Ararat River		B, R			
Potts Creek	B, R, Bn	B, R, Bn	R, Bn	R PULASKI COUNTY					
Barbours Creek	B, Bn	B, Bn	B, Bn	B Peak Creek (W. Fork)		B, R			
Barbours Creek (N. Fork)	B	B	B	ROANOKE COUNTY					
Cove Creek	B	B	B	Roanoke River		R, Bn			
DICKENSON COUNTY				Tinker Creek		R, Bn			
Frying Pan Creek	R	R	R	R ROCKBRIDGE COUNTY					
Russell Fork River	R	R	R, Bn	Mill Creek		B, R, Bn			
Pound River	R	R	R, Bn	R Irish Creek		B, R			
FLOYD COUNTY				South River		R			
Burkes Fork	B	B, R		R Maury River (Goshen Pass)		R, Bn			
Howell Creek	B	B	R	ROCKINGHAM COUNTY					
Little River (W. Fork)	B, R, Bn	R	R	Shenandoah River (N. Fork)		B, R, Bn			
Meadow River	B, R			Dry River		B, R			
Laurel Fork	B, Bn			Briery Branch		R			
Mira Fork	B			Silver Lake		B, R, Bn			
Goose Creek	R, Bn	R		German River		R, Bn			
Little River	R, Bn	R, Bn	R, Bn	R Boone's Run*		B			
Little Indian Creek	R	R		Shoemaker River*		R			
Little River Fish for Fun		R		Skidmore Fork*		R			
FRANKLIN COUNTY				Briery Lake*		R			
Maggadee Creek	B, R	B, R		Hone Quarry Lake*		R			
Runnett Bag Creek	R, Bn	R, Bn		Hone Quarry Run*		R			R
FREDERICK COUNTY				R RUSSELL COUNTY					
Back Creek (Upper)	B, R	B, R		Big Cedar Creek		R, Bn			
Back Creek (Lower)	B, R	B, R		Laurel Bed Lake <sup>2</sup>					
Hogue Creek	B, R, Bn	B, R, Bn		SCOTT COUNTY					
Cedar Creek	B, R, Bn	B, R, Bn	R	R Little Stony Creek		B, R			
Paddy Run	B, R	B, R		Stock Creek		R			
Clearbrook Lake	B, R, Bn	B, R, Bn	B, R, Bn	R Big Stony Creek		B, R			
GILES COUNTY				Straight Fork*		R			
Big Stony Creek	B, R, Bn	B, R, Bn	R, Bn	R SHENANDOAH COUNTY					
Dismal Creek*	R	R	R	Passage Creek		B, R, Bn			
GRAYSON COUNTY				Big Stoney Creek		R, Bn			
Big Wilson Creek	B, R, Bn	R, Bn	R, Bn	R Cedar Creek		B, R			
Middle Fox Creek	B, R	B, R	R	Mill Creek		B, R			
Big Fox (Upper)	R, Bn	R, Bn	R, Bn	R Paddy Run*		R			
Big Fox (Lower)	B, R, Bn			Peters Mill Creek*		R			
Elk Creek	R, Bn	R, Bn	R, Bn	R Tomahawk Pond*		R, Bn			
Peach Bottom Creek	R	R		Little Passage Creek*		R			
Helton Creek	R			R SMYTH COUNTY					
Hale Lake	R	R	R	R S. Fork Holston River Gorge*		R, Bn			
GREENE COUNTY				S. Fork Holston River (Lower)		B, R, Bn			
Lynch River	R	R	R	Big Laurel Creek		R, Bn			
South River	B, R, Bn	B, R, Bn	R, Bn	R Staley's Creek		B, R			
Swift Run	R, Bn	R, Bn	R	Middle Fork Holston River		R, Bn			
HENRY COUNTY				Comer's Creek*		R			
Smith River (Philpott)	B, R, Bn	R, Bn	R, Bn	R Hurricane Creek*		R			
Smith River (Bassett)	R	R, Bn	R, Bn	Cressy Creek*		R			
Smith River (Koehler)	R	R, Bn	R, Bn	Dickey's Creek*		R			
HIGHLAND COUNTY				R TAZEWELL COUNTY					
Bullpasture River	B, R, Bn	B, R, Bn	R, Bn	R Wolf Creek		R, Bn			
Potomac River (S. Fork)	B, R, Bn	R, Bn		Cove Creek		R, Bn			
Jackson River	B, R, Bn	R, Bn	R, Bn	R Laurel Creek		B, R			
Back Creek	B, R	B, R	B, R	Roaring Fork		B, R			
LEE COUNTY				R Little Tumbling Creek		B, R			
Martin's Creek	B, R, Bn	R, Bn	R	R WARREN COUNTY					
Powell River (N. Fork)	B, R	R	R	R Gooney Run		B, R, Bn			
MADISON COUNTY				R WASHINGTON COUNTY					
Garth Run	B, R, Bn	B, R, Bn	R, Bn	R Whitetop Laurel (Upper)		B, R, Bn			
Hughes River	B, R	R	R	R Whitetop Laurel (Lower)		B, R, Bn			
Robinson River	B, R, Bn	R, Bn		R Tennessee Laurel		R, Bn			
Rose River	B, R	B, R		Green Cove Creek		B, R			
MONTGOMERY COUNTY				Big Brumley Creek		B, R			
Poverty Creek*	R	R		Big Tumbling Creek		B, R			
Craig Creek*	R, Bn	R		Valley Creek		B, R			
Roanoke River (S. Fork)	R, Bn	R, Bn	R, Bn	R Straight Branch*		R			
NELSON COUNTY				R Straight Branch		R			
Tye River	B, R, Bn	B, R, Bn	B, R, Bn	R Beartree Impoundment*		R, Bn			
Tye River (N. Fork)	B	B	B	R WISE COUNTY					
South Rockfish River	B	B		Middle Fork Powell River		B, R			
Stony Creek	B	B	B	Mountain Fork*		R			
PAGE COUNTY				Burns Creek*		R			
Cub Run*	R	R	R	Clear Creek*		R			
Upper Passage Creek*	R	R	R	High Knob Lake*		R			
PATRICK COUNTY				R WYTHE COUNTY					
Dan River (below Powerhouse)	R, Bn	R, Bn	R, Bn	R E. Fork Stoney Creek*		R			
Dan River (above Powerhouse)	B	B	B	Gullion Fork Creek*		R			
Rock Castle Creek	B, R	B, R		R W. Fork Dry Run & Dry Run*		B			
Round Meadow Creek	B	B, R		R W. Fork Reed Creek*		R			
Mayo River (N. Fork)	R, Bn	R		Gullion Fork Pond*		R			
Mayo River (S. Fork)	B, R	B, R							

*(Right) The appearance of dogwoods will signal "prime time" for shallow water crappie fishing—early spring.*

# Year-round SPORT For Everyone

No matter what the season,  
or the age of the angler,  
crappie fishing is  
good sport.

by Pete Elkins

**P**erfect children's fish," I thought as my seven-year-old Elizabeth gleefully reeled in a pair of small crappies. Three days later, my opinion was very different as a companion and I were taking one- to 1½-pound crappie from a large farm pond near Charlottesville.

Crappies, both white and black, have long been one of my favorite freshwater fish. Given the numbers of Virginians who pursue this prolific silver panfish, a lot of other anglers share the feeling. Most anglers, however, actively pursue crappies only during the "easy" months of early spring.

Starting in early March and continuing through April and early May, crappies crowd into shallow waters around available cover such as treetops, brushpiles, docks, or other fixed objects.

These spring crappies are as eager to strike as they are numerous. Most anglers use small minnows. But they may be involved in a lot of needless expense and trouble. Several years ago, I had the opportunity to frequently fish South Carolina's Santee Cooper Lakes with some truly expert crappie fans.

I came away entirely convinced of one thing: when crappies are shallow (less than eight feet down) artfully fished artificials will far outproduce live minnows. On many occasions, even in murky water, where a lure couldn't be seen three inches below the surface, big crappie would simply inhale tiny 1/16-ounce artificial

jigs. At first, I reasoned that perhaps South Carolina crappie were just an unusually eager breed. Then I tried the same methods in Virginia waters, with nearly identical results.

Place two anglers in a boat when crappie are shallow. Give one a cane pole with minnows and the other a modified fly rod (more about that later) with specific artificial lures, and with equal access to the most "fishy" cover. By day's end, the artificials will have caught at least one third more crappie.

**T**he reasons are obvious. Unlike the live bait angler who must constantly rebait, free snags and generally "hassle" with live minnows, the artificial lure angler loses fishing time only while unhooking a fish.

There is, of course, the philosophic argument about the virtue of watching a bobber's antics above an active minnow. That argument is well-taken and commendable. But if it's crappie in the ice chest that you're seeking, develop a similar philosophy for watching the tell-tale point where the line above a jig enters the water.

Crappie, after all, are a prolific fish. In many ways, they are their own worst enemies, especially in small waters. Consequently, an angler should feel no qualms about taking a bountiful harvest of the delicious panfish.

Bountiful harvest of crappie in the 3/4-pound and larger class are most common during the spring. The drill is fairly simple. An angler need only search for thick cover and warming water. Even after crappies move into shallow cover, frequent March or April cold fronts may cause them to move back out into deeper water. They won't move very far, however. Astute anglers merely fish their jigs several feet deeper and in deeper water near the cover. The most severe cold fronts may push crappies back into a nearby creek or river channel, where a careful survey with a flasher or Graph depthfinder will readily pinpoint the suspended crappie.

Don't be dismayed by spring rain-soiled waters. Up to a certain point, "colored" water makes crappie even easier to catch by jigging artificials. At the peak of spring spawning action, murky water may cause crappie to be striking within six inches of the surface. Given a choice of crystalline water or opaque water with visibility of six inches or so, give me the latter every time during the spring.

Spring crappie artificial success comes most readily to those who use specialized equipment. Ultra-light spinning tackle provides optimum sport, but minimal effectiveness. (Summer crappies are a very different proposition.) Cane poles are effective and popular for jigging with small artificials, but there's a more efficient way.

Bobby Tindall, the South Carolina creator of the small locally popular "Sneak" boat, and crappie fisherman extraordinaire, showed me the most effective rig of all—a modified fly rod.

A fly rod offers several distinct advantages: length, lightness, sensitivity, resiliency and fun. Let's look at each advantage in more detail.



*(Below) Elizabeth Elkins shows that summer crappie are also easy if you locate deepwater schools. A pair of tiny jigs fooled these two crappies. (Bottom) Small boats permit spring time anglers to penetrate thick cover in search of spawning crappie. (Right) An angler admires healthy crappie taken on modified fly rod and mini-jigs in a Virginia farm pond.*





In most good crappie cover, such as fallen trees, crappie move into the thickest part of the cover. Conventional spinning rods simply cannot reach far enough back into the cover where the real "saddleblanket" crappies frequently lurk. One basic point: this style of crappie fishing doesn't involve casting. The lure is presented by simply lowering it straight down from the rod tip.

An eight- to nine-foot fly rod can reach a long way into good cover. The long rod also keeps the lure at least seven feet from the boat, thus minimizing the possibility of spooking fish.

With a long fly rod, a jig may be easily fished as deep as the rod length, yet easily freed from a snag. Try that with a 5 1/2- to seven-foot spinning rod when the fish are holding eight feet down. With other rods, a snagged lure requires pulling until the hook bends, the cover surrenders, or the line breaks. In any event, nearby fish will be disturbed.

In contrast, a fly rod-equipped angler can reel the tip down snug against the head of the lure. A firm push of the rod tip will almost always free the lure.

Lightness is almost as important as length. Wielding a long, bulky cane pole throughout the day soon becomes onerous. An 8 1/2-foot graphite fly rod with light inexpensive reel loaded with 10 or 15 yards of monofilament may weigh little more than a pound.

Cane poles are also awkward affairs. When a fish is hooked, minor gymnastics are required to even reach the fish if it dangles from four feet of line on a 12-foot pole. With a flyrod, a quick strip of line from the reel permits swinging the fish within easy grabbing or, depending on fish size, netting range.

Sensitivity is the forte of a graphite fly rod. Used conscientiously, it's almost possible to feel a crappie breathe on a jig suspended two feet below the surface.

Even though sensitivity is usually a function of rod stiffness, the added length of a fly rod permits stiffness and resiliency. Most crappie are lost because of a heavy hand on the rod, causing thin hooks to tear through delicate jaw tissue. A fly rod flexes with the fish, making torn-free hooks a rarity.

We go fishing for many reasons. Fun is among the primary ones. Even a three-pound crappie on a light fly rod always seems an "iffy" affair, though it really isn't. For me, at least, that "iffiness" makes up a large part of the experience.

In order to capitalize upon these advantages of a fly rod, some modification is necessary. Again, credit must go to Bobby Tindall for revealing the method. If a conventional fly rod, equipped with so-called "snake" guides is used, wet mono will stick to the rod blank, making it difficult to properly sink a 1/16- or 1/32-ounce jig.

Replacing the snake guides of a typical fly rod with small aluminum oxide guides, number 12 or smaller, keeps the line away from the blank, yet adds only negligible weight to the rod. With this modification, the lure can be held against the rod tip while a foot or so of slack line is looped in the reel hand. Then, the rod tip can be inserted into every possible opening in the crappie cover, the slack line released, and the lure will drop straight down from the rod tip. Getting a big crappie out of such a location is what makes the method an exciting one!

Reels for this crappie technique serve only to store the line. Lightness, not quality, is the crucial element. With largemouth around, it helps to have a relatively reliable click drag on the reel. More than 10 yards of line isn't

necessary, but the line is easier to handle if enough is placed on the reel to increase the spool's diameter.

In Santee-Cooper's cover-rich waters, where big crappie (commonly up to three pounds) and largemouth shared similar habitat, I used 12- or even 14-pound mono. In Virginia waters, six or eight, depending on water clarity is usually better. Lighter line obviously enhances use of the 1/32-ounce jigs.

These tiny jigs are deadly lures. There are many excellent crappie jigs available on the market. Materials range from reliable chenile and maribou to modern vinyl plastics. My favorite jig, not only for spring, but for year-round crappies, is Garland's "mini-jig." There are many imitations of this multi-tailed plastic jig, but, as in the case of Hopkins spoons, the imitations are usually inferior in terms of fish attraction and durability.

Mini-jigs are available in 1/64- to 1/2-ounce ranges. The 1/32- and 1/16-ounce are superior for crappies. Colors run the rainbow's gamut. Yellow is always reliable, especially in prime murky water. Red/white, white and green/white are excellent in clearer water.

Mini-jigs continue to provide excellent results during summer, fall, and winter. But tactics must change to adapt to a crappie's habitat preference.

After the pastel days of spring, crappie move into deeper waters, remaining suspended at intermediate depths over creek channel, submerged treetops or brushpiles, and under bridges. In farm ponds, deeper areas near the pond's dam or spillway are usually productive.

The first hurdle is locating the fish. This can be done by use of electronic depthfinders or by slow trolling with jigs at various depths. Depthfinders substantially reduce the location problem, especially since suspended fish are obvious even on a flasher type depthfinder.

After locating schools of crappie, tiny lures such as mini-jigs are usually just as productive as minnows except when the fish are holding below 15 feet. Minuscule lures are very difficult to "feel" below that depth. Thus, minnows may be better in the case of crappie hugging bottom or suspended at 20- to 25-foot depths.

Jigs are best presented on four- or six-pound line with a light spinning rig. Usually, the best retrieve is a molasses-paced crawl of the reel handle, just fast enough to maintain the lure at a desired depth. The strikes will be characteristically subtle "plucks" followed by a instant's loss of "feel" with the lure. As soon as the strike is detected or even suspected, an experienced crappie angler will instantly set the hook firmly. This firm strike is necessary only because of slack line and the "stretchiness" inherent in fine diameter monofilament line.

Proper lure presentation may require casting to the suspect area, then counting as the lure falls before beginning the slow, steady retrieve. Depth is critical for crappies. Consequently, this "counting down" technique will provide a handy reference after catching the first fish.

Crappie fishing, like most fishing, can be as simple or as esoteric as an imaginative angler cares to make it. Children and seasoned angler alike can enjoy crappies year-round. Occasionally while helping my daughters catch these silver panfish or when catching them alone, I chide myself for being so intent on such a small fish. After catching black marlin and tarpon, why bother with a fish that probably averages around 10 ounces?

Then the answer to my inward question comes readily: crappie are fun. □

# —March Journal—

edited by Mel White

## Information, Please

*Wanted:* Information about barn owls. Reports of roosting or nesting barn owls, through to the summer of 1985, are needed for a study of their habitat use and nesting productivity in Virginia. Information gathered in this study will be used toward preserving this increasingly rare bird. Please include county, route number, and property owner's name when known. All reports will be kept confidential.



Barn owls can be easily distinguished from other owls by their medium size (15-15" tall, 40-45" wingspan), white underparts and golden upper plumage, white heart-shaped face, and dark eyes. Instead of "hooting," they do a lot of screeching and hissing. They are frequently found in barns, silos, church steeples, abandoned buildings and tree cavities.

Please send all information to:

Chuck Rosenburg  
Department of Biology  
College of William and Mary  
Williamsburg, Virginia 23185  
(804) 253-4240

Barn owls often use nest boxes. If you would be interested in receiving instructions for building barn owl nest boxes, send a self-addressed stamped envelope to the above address. □

## Renowned Wildlife Artist Exhibits in Richmond

An exhibition of limited-edition prints of works by Robert Bateman, noted Canadian wildlife artist, will be exhibited at the Science Museum of Virginia March 4-28. The opening of the exhibition coincides with Bateman's appearance at The Woman's Club in Richmond.

Bateman was born in Toronto in 1930 and picked up his early enthusiasm for the natural world at the Royal Ontario Museum. He studied geography at the University of Toronto, took part in geological research, traveled extensively, taught geography and art and, as an artist, experimented with a variety of modern art styles and techniques. In the

1960's, influenced by the work of Andrew Wyeth, he returned to realism in his painting, uniting his talent as an artist with his great knowledge and love of nature.

Bateman's works quickly became renowned for their dramatic composition, remarkable detail and powerful immediacy. The demand for his paintings has long outstripped the supply; limited-edition prints have made his work accessible to a much wider public.

In 1981 *The Art of Robert Bateman* was published, and 100,000 copies are now in print. Canada's wedding gift to Prince Charles was a Bateman painting.

The Science Museum of Virginia is at 2500 West Broad Street in Richmond. The exhibit areas are open Monday through Saturday between 10 a.m. and 5 p.m. and on Sunday from 11 a.m. to 5 p.m. Admission to the exhibit areas only is \$1.50 for adults, \$1 for senior citizens and those 6 through 17, while Museum members and children under six who are part of a family group are admitted without charge. Parking is free. □

## Non-Game Update

### Virginia's Osprey Population

At one time March was considered the beginning of the new year. It is in March that spring officially arrives after what usually seems like a very long winter. Many of Virginia's birds return from further south; among them is the osprey.

This familiar fish hawk makes its summer home along the Chesapeake Bay and its tributaries. It spends the winter in South America, where it also stays the first two years of its life.

# March Journal

The osprey is a large bird, almost as large as the bald eagle. Its wing span reaches from 50 to 70 inches. The upper wings and back are dark brown, the head is white with a black eye stripe, and the lower body parts are white with brown speckles. In flight the bird appears mostly white with a dark brown patch at the bend in the wing.

This fish eater dives almost completely underwater to grasp a fish with its feet. The bottom of the osprey's toes are rough; this characteristic, and its ability to rotate one toe back (so there are two toes forward and two backward) make it easy for the bird to hold on to its slippery catch. Once caught, the fish is turned head forward and carried to a perch or nest to be eaten or fed to young. The osprey often loses its catch to the large bald eagle. The eagle dives at the osprey, forcing it to drop the fish which the eagle catches before it hits the water.

Virginia's osprey population is being monitored by Dr. Mitchell Byrd of the College of William and Mary. This is one of several wildlife inventory projects being done under the Non-Game Wildlife and Endangered Species Program. The osprey population is not endangered but at one time was threatened by pesticides which caused a thinning of the egg shells in the 60's and early 70's.

Virginia is the nesting ground for over 700 pair of osprey, making the Chesapeake Bay and surrounding tributaries home to one of the largest breeding populations of osprey in the world. The nesting season is from mid-April to July. The 1983 reproduction survey of 350 active nests showed an average of 1.25 young per nest. Assuming that all young counted survived another two weeks to fledge, the population in Virginia is being maintained at its present level. Continued surveys of the nesting population are planned. The large, bulky

nests are easily monitored by biologists. They are built on tree snags, special nesting platforms or the Bay's channel markers. Channel markers seem to be a favorite nest site, although the large nests often obstruct the navigation lights. When lights are obstructed, an additional light is placed on or above the nest. The osprey is beginning to reoccupy the lower James River, and nesting platforms are being placed at the Commission's new Watchable Wildlife Area on Ragged Island by the Boy Scout Troop from Windsor. We hope that the osprey will use these new platforms, making it easy to watch them.

In addition to surveying and banding young osprey, Dr. Byrd has been retrapping adult birds in the Bay. From 1970 to 1980, over 6,000 birds were banded as nestlings in Virginia and Maryland. These birds are now in the breeding population. By recapturing them, we hope to learn more about the population structure.

The Game Commission is helping to re-establish the birds in Pennsylvania and Tennessee. Both states have low osprey populations. For the last two years, each state has received 11 osprey nestlings five to five and a half weeks old. The birds were raised in hack towers, in much the same way that Virginia did with peregrine falcons. We hope that in three years, the birds will return to the area to nest.

In addition to monitoring the osprey population, funds from the Non-Game Program are being used for recovery programs of Virginia's endangered species, the inventory of other non-game species, and public outreach and education. Contributions to the program can be made from your tax refund on your state tax form, or sent directly to the Game Commission. □

by Susan Gilley



## New Commissioner

Henry Alexander Thomas, a native of Alexandria, has been named by Governor Charles S. Robb to fill the unexpired term of Commissioner Frank F. Everest, Jr. Mr. Thomas represents the eighth congressional district. Mr. Thomas, an attorney, is Counsel to the law firm of Thomas and Fiske, P.C. in Alexandria, Virginia. He is also Commissioner of Accounts for the Circuit Court of the city of Alexandria and is currently the President of the University of Richmond's Law School Alumni Association. Mr. and Mrs. Thomas, the former Roberta Shaw of Falls Church, have three children and make their home in Alexandria.—Francis N. Satterlee

# Spring Turkey Calling Jubilee & Banquet

The Richmond Chapter of the Virginia Wild Turkey Federation has scheduled its annual spring banquet and calling contest for the upcoming spring gobbler season. All sportsmen and turkey hunters are welcomed to a calling contest, turkey calling seminars and spring and fall turkey hunting techniques. The admission fee is \$2. The event concludes with a buffet banquet; tickets for this are \$12. Dress is casual. It all begins at noon on April 7 at the Holiday Inn, 3200 West Broad Street in Richmond.

The schedule of events:

- 12:00 Noon- Doors open; displays, turkey calls and other spring hunting secrets
- 1:00 PM- Turkey Hunting Safety Seminar
- 2:00 PM- Spring Turkey Hunting Techniques
- 3:00 PM- Showing of "Virginia's Wild Turkey," film produced by the Virginia Game Commission
- 3:30 PM- "Southeastern Open" calling contest with awards for top five callers
- 6:00 PM- Virginia Wild Turkey Buffet Banquet

To purchase banquet tickets, send your name, address (include zip code), and check made payable to Virginia Wild Turkey Federation (\$12 per person) Virginia Wild Turkey Federation, 1924 Esquire Road, Richmond, Virginia 23235. All banquet tickets must be ordered by April 3, 1984. □



## Letters



### Spring Revisited

In coming across a clump of violets in bloom I was reminded of the pleasure I got from them as a child.

Springtime. . . For a child growing up in the country it was wonderful to be in the woods again. With the first sound of the peepers coming up from the meadow I was off to look for wildflowers.

My favorite spot was in the big woods where my Fairy Stump stood. Long before, a huge old oak had fallen leaving a stump three feet across. Nature had moved in and planted a perfect miniature garden of emerald moss, snake plantain, ferns and violets. The center heart which still stood six inches higher than the rest was hollow and always held rainwater. This made a small wishing well where you could see your reflection.

My special delight were the violets because if I pulled the middle bottom petal off here would be a Fairy sitting there soaking her feet in a tub of water after a hard night of dancing in the moonlight!

It takes a good imagination and a little mortal help but you can see them if you pull down the center petal, the base is the tub and you will see her fat little knees. You will see her head with her crown. She is sitting on a velvet throw. Look at the next violet you see; it is fun to revisit your childhood.

Lois W. Wickham  
Ashland

### Things That Go Bump In The Night

A midnight encounter with an unknown but apparently threatening wild animal is hard to imagine in the Blue Ridge less than 60 miles from the nation's capital. But my wife and I did have such an encounter, and we wonder whether *Virginia Wildlife* and its readers could help unravel the mystery.

One night last August, we left our cottage north of Ashby Gap in the Blue Ridge shortly after midnight to observe the Perseid meteor shower. We strolled over to a knoll in the middle of an uninhabited cleared area at the top of the ridge adjoining our heavily wooded property. We had been settled on the knoll for perhaps five minutes, enjoying the show, when I heard a single, low, hoarse growl that came from lower down the knoll. Not fully trusting my senses, I didn't mention it to my wife (who, not trusting hers, didn't mention it to me either). Fifteen seconds later came a second growl, which neither of us could ignore.

Grabbing my flashlight, I walked slowly down the slope in the direction of the periodic growls, which continued at intervals of 10-20 seconds. Halfway down, I caught two eyes in the glare of the flashlight, shining brightly below me in the field. The eyes were all I could see of the creature in the darkness. As I approached, the whatever-it-was retreated, not fleeing but moving away at roughly the speed of my advance, all the while keeping up its throaty growls. Despite my certainty that one doesn't encounter dangerous wild animals in a Virginia field, even at 1:00 a.m., I found my legs moving more and more slowly. When I finally reached the edge of the cleared area, the animal behind those bright eyes was still there in the brush about 75 feet away, still growling. Feeling the hair begin to rise on the back of my neck, I took a deep breath, turned and trotted back to the top of the knoll and my apprehensive wife.

# March Journal

My question is: what in the world was that beast out there? A bobcat? A fox? A rabid raccoon? The growls didn't really fit any of them, nor such other possibilities as a feral dog or a large house cat. I'm still baffled. A few weeks ago, however, my wife stopped at the Post Office in Paris, Virginia, at the foot of Ashby Gap. While chatting with her, the postmistress asked casually if we had ever sighted the mountain lion that several people had reported seeing up on the ridge north of the Gap, where our cottage is. My wife gasped!

I can't really believe that I was stalking a mountain lion out there on that August night. A phone call to the Fish and Wildlife Service told me that there have been no confirmed sightings of mountain lions in the eastern states north of Florida since the early years of the century, although—and I pricked up my ears at this—reports of their return to their former haunts have begun to accumulate in recent years. And if it wasn't a mountain lion, what was the beast out there with the bright eyes and the low, menacing growl?

Edward C. Ingraham  
Bethesda, Maryland

After consulting several of our biologists about your midnight encounter, it is our studied opinion that your growling beast was a bobcat. Following or circling people while uttering low growls is a typical behavior of the male bobcat. Those who have encountered one claim it is a rather intimidating experience.

Mountain lions also follow humans but their typical utterance is a shrill scream. A bear would probably woof rather than growl and probably wouldn't hang around. The bobcat, of course, is not dangerous but can be scary in the dark.—Editor

## About the Authors

**William D. Weekes** is a freelance writer living in Spartanburg, South Carolina. Mr. Weekes has written numerous articles for *Virginia Wildlife*, including "Eight-Legged Leaper" in last month's issue (jumping spiders) and "Kudzu: The Plant You Love to Hate" in August 1983. **Martha Sutton** is a sophomore at Westhampton College of the University of Richmond. She hails from Low Moor, Virginia (near Clifton Forge). Miss Sutton is a journalism and American studies major who is working on the staff of *Virginia Wildlife* through the University of Richmond's Quill Program, a scholarship/internship program for liberal arts students. **Mike and Dorothy Mitchell** are freelance photographers living in Newport News. **Jack Randolph** is assistant director of the Game Commission and a widely-published outdoor writer. **Dorothy Beecher Artes** of Indian Head, Maryland has written several articles for *Virginia Wildlife* and other magazines, including *Chesapeake Bay* magazine. **Harry W. Murray** is a fly fisherman and fly fishing instructor. He has written several articles on the subject for *Virginia Wildlife*; he is the proprietor of Murray's Fly Shop in Edinburg. **Bob Wollitz** is a supervising fisheries biologist with the Commission; he works out of Marion. **Pete Elkins** has been a frequent contributor to *Virginia Wildlife* and many other magazines; the former Virginia resident now lives at Ft. Benning, Georgia.

## Growing Up Outdoors

### All About Amphibians

If you're looking for fish, you look in water. If you're looking for squirrels, you look on the ground or in a



Leonard Lee Rue III

tree. But where do you look for frogs and salamanders?

Frogs and salamanders belong to a group of animals known as *amphibians*. Amphibians are animals that can be found either on land or in water. Many of them spend part of their lives on land and part in the water.

They hatch from eggs into a larval stage. You may have seen tadpoles in ponds and streams. They are the *larvae* of frogs and toads. (Larvae is the plural of larva.) After the larval stage, many amphibians, such as frogs, toads, and salamanders, live on land.

Amphibians are important because they eat many insects and are food for larger animals. Most have four legs and smooth, moist skin. They lay their eggs in fresh water or in moist places on land. You can find amphibians most easily on a rainy night near a pond.

Two kinds of salamanders which are common in Virginia are marbled salamanders and newts.

Marbled salamanders are three and a half to five inches long. They are shiny and black with big white markings on their backs. They live under rocks or logs in swamps or in moist, sandy areas along ponds and streams.

You can keep marbled salamanders as pets in a terrarium if you cover the bottom with damp soil or pieces of leaves. You can feed them earthworms, insects, snails, and small pieces of meat.

Newts have a slightly different life cycle from other salamanders. As larvae, they spend several months in the water then come out late in the summer. When they come out, they are known as efts.

Efts are bright red or orange and have black spots on their backs. They live on the land for one to three years, then return to the water to mate and lay eggs. They stay in the water for the rest of their lives.

At this point, the adult stage, they are greenish-brown with red and black spots. They live in the shallow waters of clear lakes and ponds and make good aquarium pets.

Salamanders breathe through their skin and cannot make noises, but frogs and toads have lungs and make plenty of noise.

Both the American toad and the bullfrog can be found in almost all parts of Virginia. Bullfrogs are the largest frogs in the state. They are eight to nine inches tall. They like to live in large ponds, lakes and streams and eat insects.

Each female adult bullfrog can lay about 12,000 eggs. The eggs hatch in about five days, but the tadpoles don't become frogs until about a year later.

American toads are usually two and a half to four inches tall. Toads do not cause people to get warts, but the warts on their bodies can secrete a white substance. This substance can irritate a person's eyes and mouth, but it is not dangerous.

You can keep tadpoles in a jar or aquarium. First, fill the container with pond water, then place a string of toad eggs in it. Tadpoles need to eat, so be sure there is plenty of algae and other plant material from the pond in there.

When the tadpoles begin to grow legs, it is best to let them go back in the pond or stream where you found them. Frogs and toads are needed near ponds and streams to keep insects under control. □

by Martha Sutton



American Toad

Leonard Lee Rue III

**WORD SEARCH**  
How many of these words can you find? Circle the letters that form each word, as we did with "frog." Words may read from left to right or top to bottom.

American Toad  
Amphibian  
Bullfrog  
Eft  
Frog  
Insects  
Larvae  
Marbled Salamander  
Newt  
Pond  
Streams  
Tadpole  
Toad

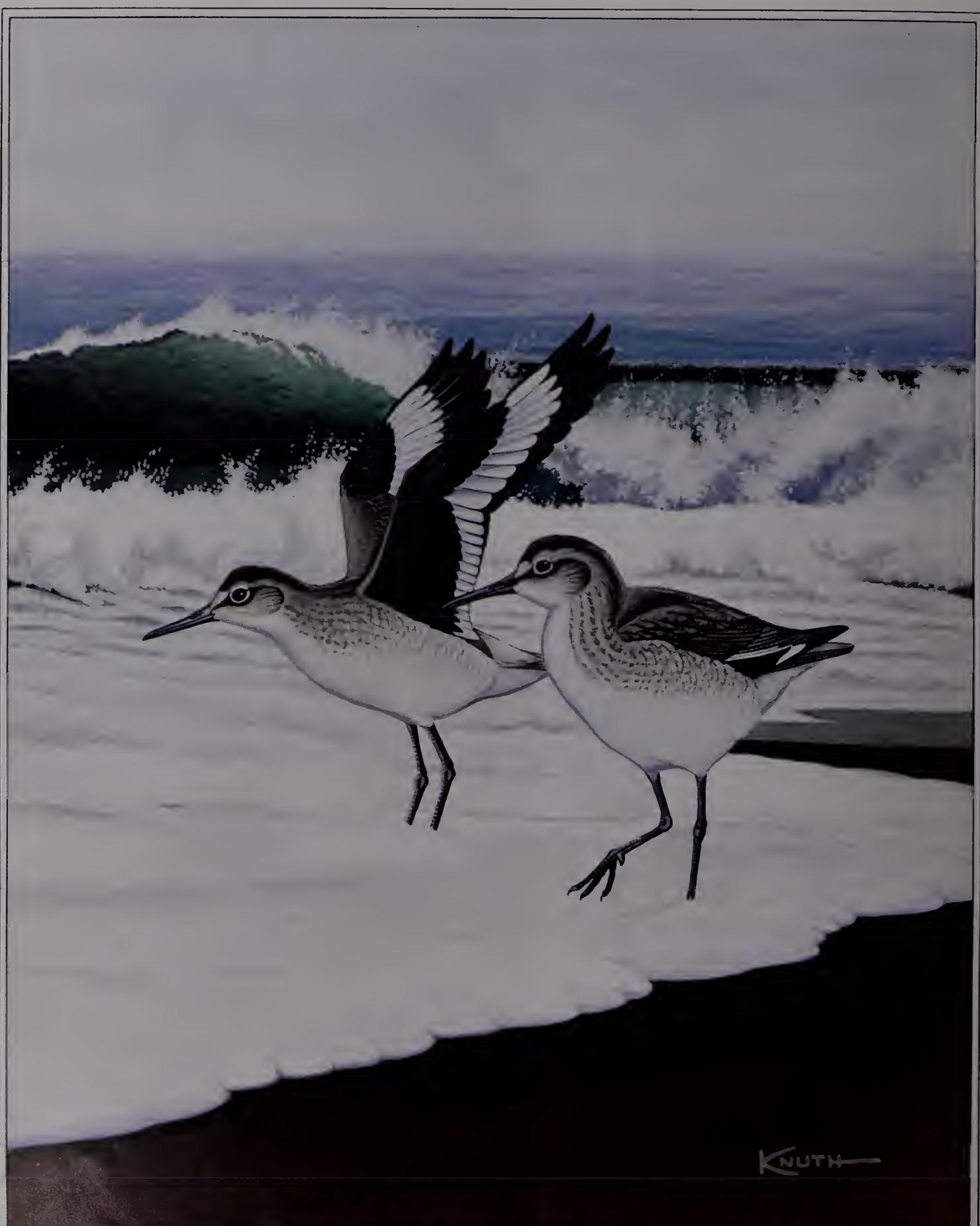
I M B P A T O A D A  
N A S T R E A M S M  
S R A T F S P E B P  
E B L F I H N R U H  
C L A R V A E I L I  
T E M O B N W C L B  
S D A G E F T A F I  
P O N D D M B N R A  
W S D S A I H T O N  
T B E L L T R O G D  
B F R R C G W A T H  
T A D P O L E D E R

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If you have questions about this, or any question concerning your *Virginia Wildlife* subscription, write to us in care of Data Processing, Virginia Game Commission, P.O. Box 11104, Richmond, Virginia 23230-1104, or call 804/257-1449.

New Address	City	Zip	Effective Date
State		Attach most recent address label here.	



# Bird of the Month

## The Willet

The 23-foot boat tore up the calm surface of the tidal channel as we sped seaward through the salt marshes of Virginia's Eastern Shore near Oyster. Flocks of shore and marsh birds took flight as we curled through the maze-like system of tidal creeks. The most noticeable of the scattering birds had flashing black and white wing patches and uttered a whistling call which could be described as "pill-will-willet," over and over again.

It's almost impossible to take a walk or boat ride along Virginia's Eastern Shore coastlands without flushing this common Virginia shorebird. Its distinctive call echoes through the salt marshes and Barrier Islands throughout the summer and most of spring and fall. It flashes black and white wing patches as well as showing a white rump and tail as it takes flight, constantly uttering its call. The call is pleasant and musical when first heard, but can get old after a time.

The willet was given the scientific name of "catoptrophorus," a Greek word for "carrying a mirror." This is in reference to the contrasting white and black wing patches which are the same topside and underneath—the white patches flashing like a mirror as it flies. On the ground and at rest it is rather plain looking. Its color is basically grayish-ashy above, lighter below and spotted and barred with dark brown. It has a long, straight bill, long legs and partially webbed (semi-palmated) feet. Its bill and legs are a little sturdier than those of other shorebirds. In winter, its color is a bit paler overall as it loses its dark markings. The willet measures about 14 to 16 inches in length.

While "willet" is its name in all bird books, it has numerous local names up and down the coast. They include: stone curlew, Spanish plover, semi-palmated snipe, duck snipe, pill-will-willet, will-willet, Billy-willy, pied-winged curlew and "humility."



One naturalist wrote that it got the name "humility" because despite its flashy, noisome appearance, it feeds "humbly" in the mud, probing for small marine life—especially fiddler crabs. Other foods include crayfish, beetles, crickets and grasshoppers.

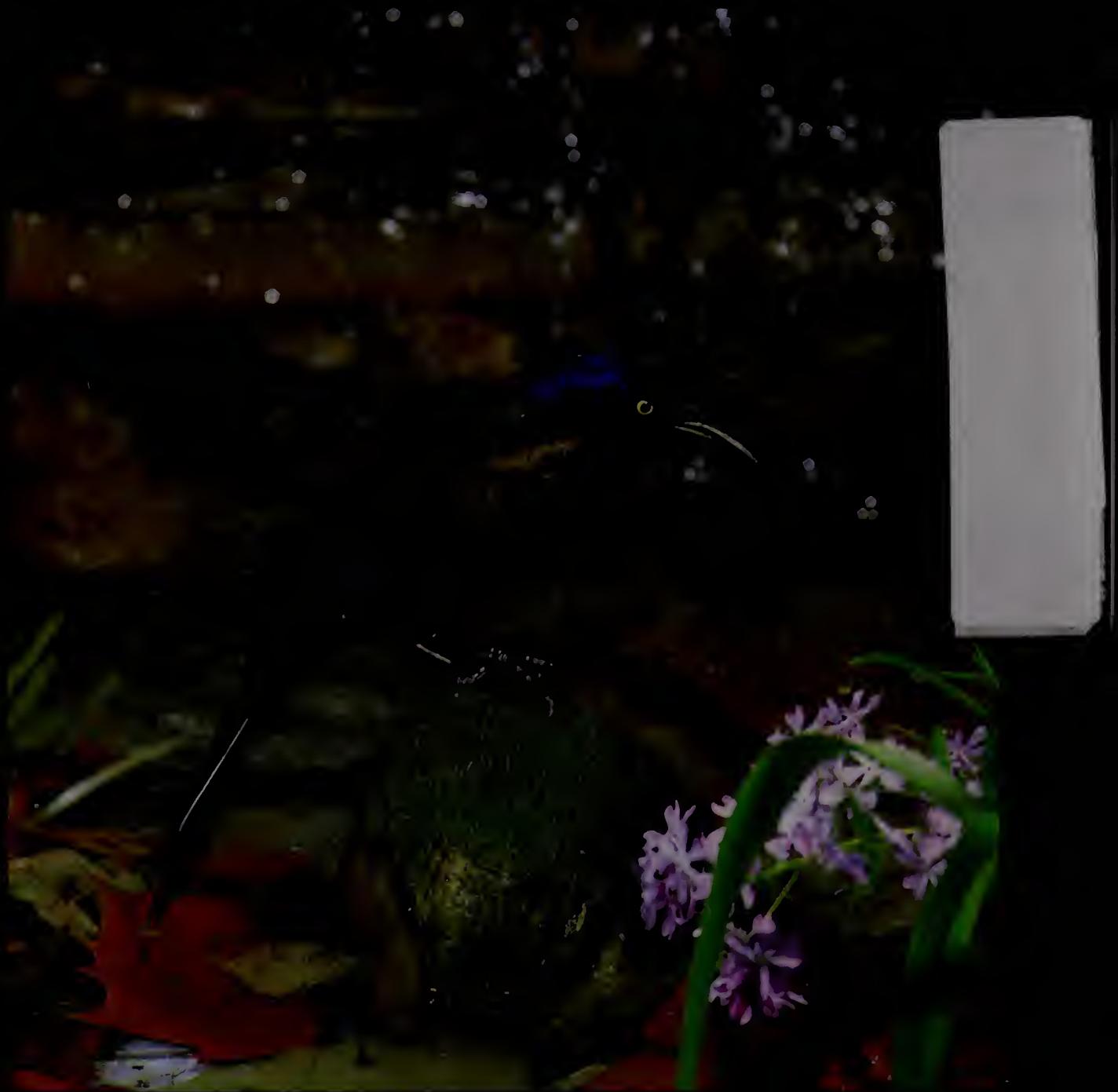
Willetts inhabit sandy islands, mud flats, shell and mud islands (called "tumps" on the Eastern Shore) adjacent to salt marshes, tidal inlets and bays. Nesting begins in late May. The nest is merely a depression in the soil or sand amid tussocks of grass and lined with dry grass, pieces of shells and bits of beach debris. Normally, four eggs make up a clutch. They are distinctly pointed and are usually arranged in a pinwheel shape with pointed ends together. They vary in tones and shades of buffy to gray-green and are heavily blotched with chocolate-brown. Willets nest in colonies—often with other species as well—close to water in both fresh and saltwater. Should an intruder threaten, they respond with much calling, cheeping and flying about the head of the potential predator.

Willetts breed from Nova Scotia and Prince Edward Island south; on

the coast from New Jersey to Florida and the Gulf Coast to Texas. They winter from South Carolina and the Bahamas south to Brazil and Southern Peru.

Around the turn of the century, willets were considered game birds. Their numbers dwindled during this period but they and their related species are in more serious danger now. The biggest threat to the willet and other coastal birds is not the hunter's gun, but the disturbance and destruction of their coastal habitat. The Barrier Islands of Virginia are rich in birdlife and are extremely important to all colonial and beach-nesting birds like the willet. Through the Virginia Non-Game and Endangered Species Program, Virginia Game Commission biologists are monitoring populations of beach-nesting species like the willet, studying their nesting success as well as the affects of predation, human disturbance, weather and other factors. We hope this research will help us to protect these interesting shorebirds in their fragile environment. □

by Carl "Spike" Knuth



# National Wildlife Week

March 18-24, 1984

Water: We Can't Live Without It.